

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director
FROM: Timothy Hunt and Rory Rauch, Pantex Site Representatives
DATE: 22 May 2009
SUBJECT: Pantex Plant Weekly Report

Emergency Lights (E-lights): The E-light systems in nuclear explosive (NE) cells are credited to provide an illumination level of 0.5 ft-candles for 30 minutes to prevent impacts to bare conventional high explosives upon loss of normal power. Last week, during an annual E-light preventive maintenance (PM) activity in an NE cell, two of eight lights lost power in less than 30 minutes, one light lost power at approximately 30 minutes, and two additional lights lost power before the 90 minute duration of the test lapsed (the additional 60 minutes are needed to verify life safety code compliance). The E-lights each have a dedicated battery, which is tested monthly for a duration of less than a minute. System engineering is considering the addition of a quarterly PM activity that increases the test duration beyond 30 minutes. The site has experienced numerous problems with this model of seismically-qualified E-lights, which were first installed in nuclear facilities about two years ago. The vendor has stopped making this particular model and B&W Pantex is pursuing options to acquire different E-lights that will be installed in facilities currently being upgraded and those facilities containing the problematic model.

W76 Operations: Last week, B&W Pantex implemented the final two static dissipative floors (15 in total) that were a part of the plan—generated in response to the W76 electrostatic discharge (ESD) code blue—to conduct all future W76 NE operations in a mitigated (5 kV) ESD environment. W76 NE operations have not been conducted in an unmitigated (12 kV) ESD environment since December. B&W Pantex removed the 12 kV ESD environment from the W76 hazard analysis report in April.

Lightning Safety: The Nuclear Security Enterprise Electromagnetic Committee met this week to discuss outstanding lightning safety concerns. To address a potential bond wire inductance hazard, Sandia National Laboratories completed the initial development of a technique that uses an inductive current transformer to verify intrinsic bonding of facility penetrations to the Faraday cage. Actions to refine and gain approval of the technique will be now be performed by B&W Pantex. The committee also discussed the plan by B&W Pantex to write a new lightning safety management program (SMP), which is intended to correct flaws in the DSA that have led to the development of superfluous lightning controls and potentially multi-point grounded weapon configurations. This SMP is tentatively scheduled to be implemented by December 2011.

High Explosive Transportation Cart (HETC): Last week, while moving high explosive (HE) main charges about ¼ mile from a staging facility to a radiography bay in the material access area, a wheel fell off the HETC as it was being pulled by a forklift. All movements of HE in the HETCs have been suspended pending resolution. It was subsequently determined that the brake/retaining nut assembly that secures the wheel to the cart had fallen off a few hours—and a couple material transfers—earlier. There is currently no explicit requirement for the material handlers to check that the HETC brakes or wheel assemblies are functioning properly prior to each loading and unloading operation. An extent of condition evaluation found that another cart showed evidence of wheel assembly damage similar to what was seen on the subject copy and the wheel assemblies will be replaced with a heavier-duty model.